

CANDU REACTOR AS DE FACTO INTERIM STORAGE

The use of a decommissioned LWR
spent fuel wet storage facility for spent
CANDU fuel

The CANDU reactor has been *co located on the site of an existing LWR and its spent fuel*, as the LWR nears its end of life, the spent fuel removed from its wet storage facility to dry casks opens up storage for the CANDU reactors spent fuel. The CANDU reactor also has a wet storage facility, as it may be burning spent fuel from regional LWR's, or DOD facility's.

LWR dry cask spent fuel is *DUPIC processed on site* for fueling the CANDU.

Cost savings over transportation, security, and construction expense of a national interim storage facility.

CANDU generates power to the grid, generating cash flows.

CANDU as de facto modified “twice” through fuel cycle

CANDU adds a century or more of wet and dry storage of spent LWR and CANDU fuel.

Consider a molten salt fluoride reactor to burn CANDU spent fuel on site of existing PWR and CANDU reactors

Consider use of spent fuel and spent fuel funding as a tool for space exploration and utilization.

CANDU reactors serves as a de facto modified once through fuel cycle performed twice!

Eliminates expensive chemical reprocessing.

Grants time to research , explore co locating molten fluoride salt reactors next to the CANDU reactors.

CANDU and Molten salt reactors share the site with existing reactors, saving on reactor site research costs and sharing existing power transmissions infrastructure.

CANDU and molten salt replace the LWR as they age and are decommissioned.

CANDU as a de facto interim storage of spent naval reactor fuel

Modify CANDU reactor for a next generation warship.

Use the DUPIC process at Idaho to fabricate fuel for the naval CANDU reactor

Should take a century or more to consume the spent fuel in a fleet of next generation warships

If the nuclear waste trust fund owns an interest in the spent fuel then the trust fund is owed a possible cash flow for the spent naval fuel

Explore burning naval spent fuel from the CANDU reactor in a molten salt reactor at end of life of the warships reactor.

CANDU reactor as a space based fission reactor for exploration missions and commercial power generation

CANDU reactors utilized as space based reactors could provide an innovative way to utilize the civilian nuclear waste trust fund for multiple purposes and repurpose the trust fund as a federal business enterprise.

NASA and DOE should fund a space based solar power demonstration mission, this should include a space based fission reactor that can burn spent fuel.

The nuclear waste trust would pay for the its share of the launch vehicle for removing the waste from the biosphere and would be entitled to a share of any positive cash flows, if any from power sells.

Space exploration CANDU reactor utilizing DUPIC fuel

cross cutting ideas are not just engineering ones! They should be program , funding and multi purpose use of tax payer dollars.

The exploration of our solar system would be well served with the economies of scale of mass production of launch vehicles and space craft for power generation and exploration. This effort would be greatly served by utilizing spent fuel as the source of power.

NASA and DOE should fund the development of a space based fission reactor that can burn spent fuel and is intended for science exploration missions, it is our responsibility to find ways to use the nuclear waste fund to pay for the spent fuel to be launched.(note)**

The civilian nuclear waste trust fund as a share holder in national and international power generating enterprises

- The civilian nuclear trust fund may own shares or own outright a fleet of regional CANDU reactors.
- spent fuel is waste fund property, it may be contributed to any enterprise in exchange for shares.
- the waste fund may participate in an international space based solar/nuclear power sat corporation as a share holder.
- the solar/nuclear power sat organization should be modeled after the former Intelsat organization.

The civilian nuclear waste trust fund as a share holder

- (1)(A) The civilian nuclear trust fund as a federal business corporation should keep as its main goal its ethical and legal responsibilities to the rate payers who fund it.
- (1)(B) the trust fund should never again be tasked with paying for research or deployment of a geological depository unless the DOE has deployed one and the waste fund is a customer for services provided.
- (1)(C) the waste fund shall take possession of the first CANDU reactor and DUPIC processing plant only after the DOE has successfully deployed it, at such time as the waste fund shall by mutual agreement amortize construction costs for the CANDU and future CANDU's over time
- (1)(D) the trust fund shall not pay for R&D or the first DUPIC regional plant except for construction costs .

The civilian nuclear waste trust fund as a power sat share holder

- (2)(A) The civilian nuclear trust fund shall enter into, *space act agreements* with NASA
- The Tennessee valley authority shall enter into , *space act agreements* with NASA
- **Federal Columbia River Power System (FCRPS)** shall enter into a , *space act agreement*
- The civilian nuclear trust fund shall or may be a share holder in a national and or a international ground based and/or space based nuclear power generator system.
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